



ACMS NEWSLETTER

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Motto

Control, Alt, Preserve

Mission

*The computer industry is now old enough to have a history.
If we do not preserve that history it will disappear forever.*

ABN
89 972 080 502

Puzzle corner: what was Digital's "VAX ACMS"? No prizes, just your name in glorious black & white!

NB membership will be \$35 from 2003.

Membership renewals are due in January

Please send your \$25 membership renewal (cheques to 'ACMS Inc') to the secretary, PO Box 847, Pennant Hills 2120

Your payment has been received,
thankyou.

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What's going on?

• Storage area update from our President

Dear members,

Although all efforts have been taken by ACMS and Kennards to delay the inevitable, it is now quite clear that our stay at Homebush will be finite. We have limited funding and resources currently, so we need to be extremely cost-efficient about what and how we move. All possible surplus will be discarded beforehand, we need to have everything catalogued and packed and ready to go when the time comes, and especially we need suitable destination storage.

Therefore the committee has taken the following action:

1. We decided that we must prepare for any move by eliminating all surplus, personal or "unsustainable" material. That is, we have to critically winnow and prune the stuff in store. We need volunteers for this task, and they should contact John Geremin. Surplus equipment may be sold, taken away if desired, or ultimately it will go to Simsmetal or to the tip. Only assisting volunteers get to take home free stuff... In the future, we will need volunteers to assist with categorising and palletising the remaining "core stock".

2. We determined that we must gain a good understanding of the bulk storage options available to

us, and the mechanisms and costs of obtaining them. Selected committee members are now scouring the Sydney basin to find this information. Old warehouses and factories, aircraft hangers, backs of factories, even storage containers in a field, are all being considered as possible storage sites. Expected costs are being obtained and examined, especially for longer-term or permanent occupancy. The committee, especially Dave Hawley, would appreciate all suggestions and leads in this regard.

3. We decided that we need to expand our sources of sponsorship, since this is a limiting factor in all our operations. A subcommittee is currently preparing a prospectus that can be used to attract sponsorship, either by donation of services or facilities, or monetarily. This same prospectus will be used in negotiating a deal on any target storage sites.

In short, the committee is looking to make the best use of the impending move. And we always appreciate assistance from any of our members!

Regards
Dave Hawley

• Meetings and Working Bees

Members can be found at the warehouse most Saturdays and Sundays. We need volunteers with technical and clerical skills. Contact the secretary on 9484 6772 (or anyone from the contact list) to check access times.

• ACMS web pages

The history pages have had a bit of an update & there is a great new member page for Ken Kirkby.

• Upcoming events

15 Nov 2002 Computer Old Timers lunch.

8 Dec 2002 Max Burnet Xmas ACMS BBQ.

For both events contact Max as indicated below.

Contacts

David Hawley, President 0410 417 602
davidhawley@optushome.com.au

Max Burnet, Secretary (02) 9484 6772
mburnet@bigpond.net.au

John Geremin, Treasurer 0427 102 060
megajohn@sneaker.net.au

Post ACMS Inc.
PO Box 847, Pennant Hills NSW 2120

Web <http://www.acms.org.au>

Editor for this issue, John Deane
j3hk@tig.com.au

News

• Death of Allan Bromley



Australia has lost a "national treasure"

- Bruce Ward
(see Predictors below).

Despite pre-knowledge it was a terrific shock.

Ed

Many of us heard the news first from John Geremin:

It is my sad duty to inform you all that Allan Bromley passed away peacefully last night (15 August).

Allan was Associate Professor of Computing Science at Sydney University and as well as being a world authority on Charles Babbage, he was also a technical authority on clocks and timekeeping.

Allan was a Committee Member and enthusiastic contributor to the ACMS in its early days up until he was overtaken by his illness.

Our sympathies are extended to Allan's Wife Anne and his other family members and close friends.

A service was held in the Wesley College Chapel, at Sydney University on Tuesday, 20th August, 2002. The eulogy was written by Professor Norman Foo who was unable to be in Australia. It was presented by Allan's friend and colleague Dr Joe Thurbon.

Eulogy to Allan Bromley.

I joined the Basser Department of Computer Science at Sydney University in mid 1975. Allan was already a lecturer there, and I soon discovered that I had in him not only a professional colleague but a friend who shared my rather old-fashioned views on research, science, education and politics. To my great joy I had found a comrade in scholarship, whose love of learning beyond the pragmatics of our discipline of computer science matched, indeed even exceeded, mine.

Together we designed a first-year course on discrete structures which so challenged the best students that many in the leading tutorial classes went on to complete their PhDs. Allan introduced algorithms via game theory, an approach that today, 25 years later, is recognized to be an ingenious way to insinuate deep ideas in the theory of algorithms to the brightest students. Characteristically, he did not think it was all that novel an approach simply because almost all his research and educational innovations seem to be logical unfoldings of his highly methodical and disciplined mind.

Unfortunately, this intellectual gift for organization did not extend to his office, which often achieved maximal entropy. In my numerous conversations with him there, books, devices, paintings, and various assorted arcana had to be moved so that we could find an empty chair somewhere. Our conversations ranged from physics, mathematics and computing on the one hand to history, political science, biology and economics on the other. We had so many opinions in common that often our conversations would sound cryptic to third parties. It was sometimes sufficient for Allan, or me, to mention merely a word or two, and our minds would complete the ellipses.

He was an Australian patriot. He loved his country deeply, and hated the cultural and political cringe that we still see today. I learned from Allan much of the Australian history I know. Like me, he held classical Greece in awe, and for the same reasons – that it was the mainspring of the Western intellectual tradition that we were both steeped in. It was fitting that a piece of his research, on the Antikythera mechanism, is about an ancient Greek instrument raised from the depths of the Aegean Sea. His reconstruction of the mechanism using only the techniques available to the engineers of antiquity was a masterpiece of scientific deduction and induction. However, this is but one chapter in his research career.



The Antikythera device as recovered

I would like to read you a citation by Matthew Connell, IT Curator of the Powerhouse Museum, in his nomination of Allan for the Distinguished Service Award. This citation summarizes the international regard for Allan's professional and scientific contributions to our community of scholars.

"Allan Bromley is a computer scientist and historian of technology and one of Australia's foremost computer historians. He has been on the editorial board of the IEEE journal, *Annals of The History of Computing* and

the Charles Babbage Institute Reprint Series for the History of Computing. He is the world authority on Charles Babbage's calculating engines and the Antikythera mechanism.

Allan has been an advisor to the museum for over twenty years, particularly to the curators and conservators responsible for the computing and calculator collection. Allan acts as an advisor and mentor to the current Curators of Information technology in their research, collecting, and exhibition work. He has also been the external representative on selection panels for new staff in the IT section.

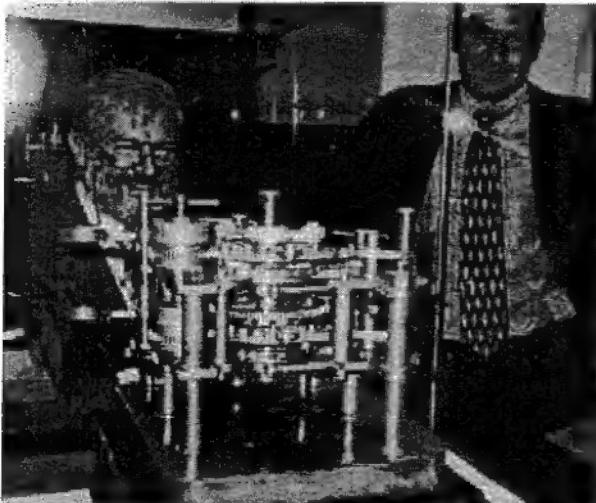
Allan has donated 14 artefacts to the museums collection including analogue computers, parts of Siliac (Australia's second computer), calculators and slide rules. He has also presented a number of books and papers to the library and the curatorial research files. He has a number of other important items that he has bequeathed to the museum.

His most significant recent contribution was with the acquisition and subsequent conservation assessment of the specimen piece of Babbage's Difference Engine No. 1. Allan advice was sought on the significance and authenticity of the piece when it came up for auction. He also provided a very astute assessment of the market and a bidding strategy for the museum which was undoubtedly crucial to our winning the bidding.

After the museum purchased the specimen, Allan worked with Carey Ward (Conservator) in disassembling the machine and measuring all the components. Data gathered from this assessment is being incorporated in new material that Allan is preparing for publication. (A photograph of Allan working with the Babbage's part appeared on the cover of the 1996 annual report).

Allan has spoken on a number of occasions at the museum including an excellent public lecture on Babbage's engines on behalf of the Australian Computer Society, and speaking to the museum's collection of slide rules at a meeting of slide rule collectors organised by the museum.

Allan's contribution as a scholar and historian of computing was recently recognised when Volume 22 Number 4, October to December 2000 edition, of IEEE Annals of the History of Computing was dedicated to him.



Allan Bromley with the Babbage Engine sample and Matthew Connell (Max Burnet photo)

Allan's contribution to the museum, the legacy of his scholarship, generosity and links to the computing community, can be seen in our unique collection, our award winning exhibition and in the high standard of enquiry and research for which the museum is now recognised."

If you did not already know it, Allan was the foremost international authority on the work of Charles Babbage. To read Allan's analyses and reconstruction of Babbage's computing engines is to have revealed before one a magnificent and elegant piece of scientific detection. Few would have had the courage, insight or ability to do it.

Allan was an inspired teacher. His philosophy was in many ways more suited to the contemplative style of the Oxbridge tradition, clearly at odds with the market-driven ethos of today. I shared his dismay at much of the economic rationalism that has infected our profession. He did what he could to protect his students against it, and to instill in them a sense of the great scientific enterprise that he so loved. Jeff Kingston, until recently Associate Professor at Bassett, was his doctoral student. Allan's influence is seen in Jeff's research methodology of careful attention to detail. Joe Thurbon was one of Allan's numerous honours student. Joe affectionately recounted the story of how Allan persuaded him that he had the potential to achieve beyond expectations. You see, when Joe started his honours research with Allan, he had by his own admission "only a mediocre undergraduate record", and was diffident. Allan advised him, "When the pond is big enough, the size of the fish does not matter". Joe collected a first class honours, and recently completed a doctoral degree under my supervision.

Allan's wit was subtle and he was fond of puns. He was also a big tease, and so was I. As we had confessed to each other so much of our past, the mutual teasing that interspersed much of our conversation relied on the peculiarly English habit of making merry with our embarrassments. He would rib me mercilessly about my poor ability in arithmetic, and I would respond by accusing him of expecting all his students to teach themselves like he did in physics and chemistry in high school. You see, he went to a country school where there were no physics or chemistry teachers, but he matriculated with today's equivalent of the highest honours in the HSC in these subjects. That he also took highest honours in mathematics would have surprised nobody. Many things came easily to his sharp mind. His record at the University of Sydney was a series of triumphs: BSc with first class honours in physics in 1967, PhD in theoretical physics in 1971, Associate Professor of Computer Science in 1987. Just for the heck of it, he was also active in the social life of Wesley College too.

I would like to read you Allan's abstract for his doctoral thesis:

"My PhD thesis dealt with maser emission from interstellar gas clouds from which stars are condensing. It provides a possible explanation for the very high degree of polarisation, particularly circular polarisation, frequently observed for this microwave emission. A computer system for algebraic manipulation of polynomials in many variables was developed for this research. A method for considerably expanding this algebraic approach using numerical computing

special purpose devices and software for this purpose, and the vision for future generalization of the framework. This is an exemplary fulfillment of the scientific method.

His many friends and admirers will miss him dreadfully. We have lost a dear friend. Allan Bromley -- patriot, scientist, historian, scholar, teacher, comrade -- we salute you.

Another eulogy by Jeff Kingston appeared in the Sydney Morning Herald and is available on-line at www.smh.com.au/articles/2002/09/10/1031608246252.html

And, of course, his fame goes on and on. The Economist for 19 September 2002 had

An ancient piece of clockwork shows the deep roots of modern technology

... Michael Wright, the curator of mechanical engineering at the Science Museum in London, has based his new analysis on detailed X-rays of the [Antikythera device] ... Analysis of the resulting images, carried out in conjunction with Allan Bromley, a computer scientist at Sydney University, found the exact position of each gear, and suggested that Price was wrong in several respects. ...

Mr Wright devised a putative model in which the mechanisms for each celestial body stack up like layers in a sandwich, and started building it in his workshop. The completed reconstruction, details of which appeared in an article in the Horological Journal in May, went on display this week at Technopolis, a museum in Athens...

In full at
http://www.economist.com/displaystory.cfm?story_id=1337165

Many of Allan's interests have been touched on here – slide rules, calculators, computers analog and digital, physics, astronomy, time, history, philosophy. A number of these themes coincided in a topic many of us hear little about:

Predictors

ie a special class of computers, often analog, usually mechanical or electro-mechanical used for predictive gun aiming – a very practical application of physics, control theory and computing. Allan's friend Bruce Ward wrote:

"there are some special "nuts" (like some of us) among the Coastal Defence "brotherhood" who will value [Allan's] lists and information (There is no known naval equivalent - but these guys are connected to most artillery historical societies in the English-speaking world)."

Headings from their recent newsletter include

- Notes from the National Archives
- CDSG Tour to the Vladivostok Fortress
- CDSG Artifact Database Project
- News from the Forts
- Update on the Panama Defenses
- News from the Pacific Islands

other news

• More passings...

Edsger Wybe Dijkstra, a key contributor to the formal establishment of the computer science field died on August 6 at age 72. Dijkstra was part of the team that developed Algol in the 1950s, and was the author of the famous "Goto Considered Harmful" letter to the ACM.

He is credited with inventing a number of programming terms such as structured programming, stack, and vector. His papers and other works are available online at the University of Texas Web site <http://www.cs.utexas.edu/users/EWD/>.

Ole-Johan Dahl passed away on June 29. Only a few weeks later, on August 9, his friend and colleague Kristen Nygaard died suddenly. Their collaboration in the nineteen-sixties produced *Simula*, and the concepts of object-oriented languages (even if it took another twenty years for the industry at large to understand it).

[thanks to Ann Moffatt, Max and the talk.bizarre newsgroup]

• ACMS on ACS web site

The ACS has a nice PDF of the timeline ACMS helped them with at

<http://www.acs.org.au/boards/marketing/group1.htm>
Unfortunatley there is no credit to ACMS anywhere.

• Bletchley Park Bombe Rebuild Milestone

Earlier this year John Harper's team completed the Mechanical Phase of the WW2 cryptographic *Bombe* Rebuild and can demonstrate all shafts etc running. "Watching the carry mechanisms operate is quite fascinating. Those who worked on the original machines tell us that the noise made brings back strong memories." The team now needs to "take a breath" before putting more energy into the electrical phase.

A major web site update is now complete at
<http://www.jharper.demon.co.uk/bombe1.htm>

• AND from Bletchley Park Computer Museum

Progress on the Digital front:

- The 11/34 continues to run smoothly,
- We now have an 11/73 running UNIX
- Next to the 11/73 is an 11/53 running Micro RSX
- We have a Pro 350 up and running Venix.

Big news on the 11 front is the decision to get the 11/70 out of storage and up and running. This is a very swish looking machine badged by Digital as a DEC SYSTEM 570 - meaning smarter cabinets and blue/white front panel. The machine ran an application called Scratchbook - a document management package with an early form of hyper linking between pages. So much for the world wide web!

Regarding the Eights...

- The DecMate II and III+ are working flawlessly
- We are adding a RX02 pair to the 8E and expect to having OS/8 running shortly.
- The Rack classic 8 is still awaiting some TLC, but we are moving my desktop classic 8 to the museum at Christmas. This works a treat!

Last but not least our MicroVax II and later VAX machines carry on without fuss, and not causing a problem to anyone, and the Alpha machine just behaves as if it is on a higher plane to the machines around it!

Kevin Murrell

• 20 years of :-)

The original smiley, or emoticon, invented by Scott Fahlman but subsequently lost, has been retrieved through the efforts of Microsoft and Carnegie Mellon University. Fahlman hadn't kept a copy of his original post, and had assumed it had been lost. But he was able to help narrow down the likely dates, and extensive

CMU trawls through old backup tapes finally nailed the posting down to 19th September 1982.

This was reported by John Lettice on the CYHIST History of Cyberspace and mentioned that CMU had been working on a joke identifier for a while. However, this triggered responses. Brian Dear wrote:

Smileys were already widely in use on the PLATO system a decade before. On the PLATO system they were much richer – made using multiple characters displayed on top of each other. You could create many different faces, beer glasses, martini glasses, all kinds of things. Some PLATO folk scoffed at plain ASCII smileys when they began to emerge, because they were so primitive in comparison and required one to turn one's head sideways to see.

This should be a rich topic for historians!

Letters (just a little bit edited)

• RE Surprise find Elliott wire memory...

Max mentioned the 'forgotten corner of our junky warehouse'. I beg to differ - that corner, until August last year, was well known and loved by Mike Chevallier. It still contains many rare items that Mike had collected and put aside for future Museum use and display.

It is indeed out of an Elliott computer. It was donated to the ACMS some years ago by David Hollway, PhD, after his retirement from the CSIRO. Mike and I collected a big load of rare items from Dr Hollway and I would expect that the details would be listed somewhere in Mike's ACMS papers. Mike and I were told a little of the history of the delay line unit, but I have forgotten and alas Mike died last year.

It is quite possible that the CSIRO obtained the delay line for some scientific use other than as 'computer memory'. If my poor memory is any use at all, my recollection is that Dr Hollway was an acoustics scientist and may have had another research project based on 'acoustic propagation delays' using the device.

John Geremin, - Collection Officer.

• Appreciating John Bennett in 1949

It is very interesting that you are writing about John Bennett's activities, we worked together and he is a personal friend and still alive. There are two aspects of his early work that I feel to be very interesting: first, he was one of the first people to develop practical applications for computers, at a time when there were very few identified. Second, he was perhaps the first person to see the need for, and carry out, improvements to the order code to make a computer easier for the programmer, this was his transition from the Ferranti Mark 1 computer to the Mark 1*. He is very modest about both these achievements, but it will be well worth while to learn more.

Sincerely Hugh Ross, Gloucestershire, England

[I had responded to a request for some Ferranti documents and mentioned John Bennett and my never-ending SILLJAC story. The resulting taped interview will appear later – Ed]

• ACMS WA Inc

I have made a very tentative start on cataloging our collection. I have a primitive web site at

<http://www.aceware.inet.net.au/acms>
It is database driven - so as I add records and images to the web server in my office - the items are immediately visible on the web site. Just a few records loaded so far. Also I have been using a very cheap digital camera so far - so the image quality

is poor. I have just purchased a Canon A200 camera and once I start using that the images should improve.

You will notice that I have shamelessly pinched the logo and aims and objectives from you guys.

I have noticed some of the web pages that you have been creating and I must say that they look very attractive and professional. If I can eventually get my site looking professional enough - would you be willing to point to each other's sites?

Best wishes
Tony Epton
Curator ACMS WA Inc



Many thanks for the details and new WA ACMS web page.

We are delighted you are using the logo etc. Makes the ACMS look like a national body etc.

The vertical lifter (mechanical devices) looks great. You should go into production. No problem with pointing to each others web site.

Cheers, Max

The Collection

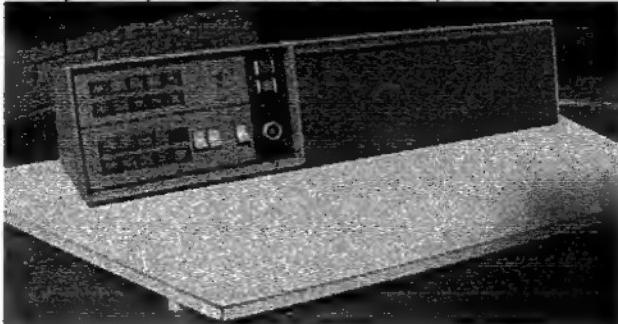
• A tale of a 1960's console

Max Burnet has done some serious detective work:

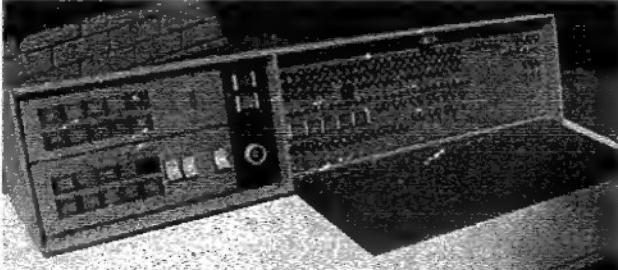
The ACMS museum recently took delivery of a large console which was obviously of mid 1960 vintage. It was delivered from Melbourne (Clue #1) by our chief southern scrounger, Andy Stewart.

It was attached to a strangely shaped (Clue #2) formica table with a set of brushed aluminum legs at one end.

At first glance it was not that impressive. Some Honeywell square switches and a blue panel.



However upon opening the front panel an impressive set of lamps was revealed - obviously a 24 bit machine (Clue #3).



The use of such a modest panel was clear evidence that the "commercial" users didn't want anything to do with all those ugly flashing lights that the "engineers" used! (Clue #4). And 24 bits not a common number.

The back of the panel was covered with electrical

tape of great antiquity. After much hard work this tape was removed to reveal a huge "GENERAL GE ELECTRIC" name tag in all its glory. Why would such a proud name be covered up? (Clue #5).



A search of the web didn't reveal much detail of early GE machines. However, the Annals of the History of Computing of Winter 1995 revealed that GE Phoenix developed a range of 24 bit machines (code named Mosaic) in the mid 60's that became the GE-400 family.

A French web page (<http://perso.club-internet.fr/febcm/english/ge400.htm>) was finally located that gave the GE 400 story. So probably a GE-415. A page of old photos (http://computer_collector.tripod.com/pics/1960s/ge415.jpg)

shows an impressive room full of a GE-415 and yes, the same console visible. And the reason for the strange shape is apparent - it joins to a console printer table at an angle. Clue 2 resolved. Definitely a GE-415.

The author has some definitive lists of early Australian computer sites by vendor in the 60's and 70's. Very little evidence of GE sites in Australia. But of course, Honeywell bought the GE computer division in 1970. A list dated May 1972 of Honeywell sites shows 6 GE-415 in Australia with 2 of them in Victoria. One at Victorian Railways and one at Honeywell head office. So Honeywell had probably covered the GE name with tape to mask its GE origins. Clue #5 resolved.

Andy finally re-established contact with the donor, and yes it had come from Victorian Railways. The owner had acquired it to use as a model train control panel, but fortunately never go around to using it.

So the museum has another lovely computing relic of the 60's. Any other GE-415 pieces in existence around the world I wonder?

John Gerernin added:

It seems that the GE-415 was sold 1964 - 1966 and was built in Europe by Bull under licence from GE.

Article

Real-time - Industrial practitioner

Ken Kirkby

Long time member, staunch supporter, and ACMS' ISP, Ken Kirkby, has given us a glimpse into his life in computing. Thanks Ken.



Ken Kirkby started with computers in 1965 at Otago University, Dunedin NZ, with their 16kw IBM 360, and spent some time punching cards and trying to run various scientific programs against memory limitations.

Following University Ken joined the NZ Department of Scientific Research's Physics and Engineering Laboratory's Auroral Station, providing technical support for various projects, including VHF Auroral Radars, Ionospheric Riometers, Whistlers, and support of the Alouette Isis satellite ground station program.

He joined the NZ Honeywell affiliate in 1973 and provided sales and engineering for Honeywell's digital automation systems for Building and Industrial Control from 1973 to 1978. In 1978 he left Honeywell to form his own company selling Honeywell Medical and Test Systems, during which time he became involved with Computer Products RTP division, an association he holds to this day. The RTP equipment has been associated with many brands of minicomputers and in order to provide customer support, Ken

has had long term involvement with various models of minicomputers, including Digital, General Automation GA16, Modcomps, Interdata - Perkin Elmer, and Hewlett Packard.

In July 1993 K. J. Kirkby and Associates P/L entered a formal agreement to support Modcomp computer systems in Australia, and to market these systems to real-time users.

In November 1995 K. J. Kirkby commenced regional internet provision, utilising Apache webservers running on Modcomp hardware. The service grew to where it was named in Money Magazine Australia's 2002 *Best Buy* Issue as one of Australia's top 32 ISPs.

K. J. Kirkby has a wide collection of operational early computers and industrial accessories, occupying two large facilities. A full range of technical literature, electronic handbooks, and support equipment has been built up over the years providing an unequalled resource for the support of legacy computer systems as well as current products. Different operating systems are maintained on SCSI drives, enabling customer specific configurations to be readily tested. A wide range of spares for these legacy systems are held in stock, or can be remanufactured.

Ken also has a very impressive collection! Here is some of it:

- | | |
|------|--|
| 1963 | Bailey 655 Process Computer PCB's. |
| 1970 | Imlac PDS Graphic Display Stations The first hypertext and games machine with mouse. |
| 1975 | PDP11/04 16kw memory |
| 1976 | Mid range PDP-11/34, Cache FP |
| 1977 | Computer Products Procom 2 8080 Basic programmed Control System. |
| 1978 | Modcomp Classic 7840 x 2 IOP DMP Tapes SMD |
| 1979 | Digital Robin VT180 VT100 with CP/M processor and RX180 floppys. |
| 1980 | Fischer & Porter LSI-11 Console I/O Control system core memory |
| 1980 | Sykes DatatronixComstor III CPM 8in floppy |
| 1981 | Hyperion Portable PC with 5 1/2 floppies |
| 1981 | Osborne 1 Very first luggable portable |

1982	Amiga used for Process control.
1982	PDP11 Falcon SBC with Infosphere Forth OS
1982	Digital PDP11/44 TU80 RL02/1 SCSI LAN FP
1982	DEC PC Z80/8080 Rainbow
1982	DEC PRO350 Professional PC LSI-11
1982	First Compaq luggable
1983	IBM PC-XT, Windows 1
1983	Perkin Elmer 2 x 3220
1985	MicroVAX II VSV21 Graphics
1985	Digital PDP11/83 Fuzzball KMV11 DEQNA
1988	Logitech 286 MS-DOS coprocessor for PDP11/VAX
1991	Modcomp 9230 x 2 DMP IOP SMD Tape
1993	Modcomp 9730 (68030 CPU) REAL/IX UNIX
1994	Modcomp 9740 (88000 4cpu) REAL/IX
1995	Modcomp 9750 (88110 CPU/75) REAL/IX
1996	Motorola 88000 2CPU

ERRATA – Ann Moffatt's Early Days. In a fit of chronological dislocation your editor noted that Conway Berners Lee invented the www. It was of course Conway's son Tim - who was 4 when Conway taught Ann. Thanks to various correspondents.

Article – part 2

Concorde

by Ann Moffatt

In part 1 Ann described learning programming on a Ferranti Pegasus in 1959, and the operation of Kodak's computing department.

In 1966 I was writing code for the analysis of the black box flight recorder of Concorde. This is a very early case of a programmer working at home. This was part of a UK government initiative to give work to women programmers working at home after childbirth. At that time in the UK, programmers were in very short supply & there was concern that programmer skills would be lost if not kept up to date.



My daughter, Claire, is in the picture. She was 37 yesterday!!

There were 40,000 instruments on Concorde - which hadn't yet flown - each instrument was read about 10 times each second. The system allowed for a maximum 4 hour flight. Concorde was to be the first non-military aircraft to carry a 'black box'. The regulations for Concorde operation was that each time the aircraft flew the black box data was to be analysed before the plane was allowed to fly again. I think this was because

Concorde was the first supersonic passenger aircraft. After each flight, data was written onto magnetic wire & 'converted' to magnetic tape. The computers read the magnetic tape data.

Coding sheets were written in pencil. I used a slide rule to calculate the engineering coefficients. Coding was all machine code, not even assembler.

Coding sheets were picked up from the programmers' homes by courier and punched on cards. The cards were brought back to the house by courier. Cards were 'sight checked' by the programmer and were then picked up by courier and taken to the computer centre Elliot's at Borham Wood.

The system was built to run on 2 special purpose built computers, built by STC in the USA and maintained by GEC in UK & France.

Test 'output' was brought back to the programmer's house by courier. If the program ran through to the end in 2 tries a bonus of a dinner for 2 was given. Testing was supposed to be completed in 5 more runs. We achieved 2 runs a week.

The programming part of the project was estimated at £20,000. We were to be paid £2,000 if we completed the project within the one year timeframe. Up to 20 women worked on the project & I 'project managed' the team for the last 6 months after the original manager, Margaret Mears, went to Australia to work with Ferranti at Woomera.

We beat the time allowed for the project and were paid the bonus. We had a very good party. The Concorde didn't fly until 1968!!

Postscript

The company is now XANSA in the UK. Ann was Technical Director when she left to rejoin the conventional workforce. In the 11 years Ann was with the company she helped it grow from 11 to 400 home based workers.

On the web

In February 1948, Dr Pearcey wrote "It is not inconceivable that an automatic encyclopaedic service operated through the national teleprinter or telephone system, will one day exist." People today call this the World - Wide - Web.

And The Pearcey Organisation exists "To promote and Encourage the Recognition of Australian Information Technology and Telecommunications Achievement." <http://www.pearcey.org.au/home/index.html>

Here's a personal site with good Oz history. Jack Smith wrote "I first programmed a computer in 1956. It was a Model 403 made by Elliott Bros, London and installed at the Long Range Weapons Establishment in Salisbury, South Australia. It was known as WREDAC." <http://members.ozemail.com.au/~jacksmtb/aboutme.htm>

The Internet Society of Australia hosts a History of the Internet in Australia, and a History of the Internet at <http://www.isoc-au.org.au/History/History.html>

Dodo does green recycling of old computer hardware in East Brunswick Melbourne <http://www.dodo.org.au>

I previously mentioned the great "As yet unnamed pc museum" (of Apple, Atari, Commodore, Dick Smith, Digital, IBM, Mattel, Microbee, Tandy, etc) but it's moved to <http://www.thepcmuseum.com/>

SoftMac Classic, is a free Macintosh emulator for Windows, with support for emulating Mac Classic, Mac II, and Mac Quadra computers and Mac OS from the original 1.1g to 8.1. <http://www.emulators.com/softmac.htm>

A bit off-topic, but if you want to see what a serious collector looks like try the Chuck Pharis web site of "Television, Radio and MORE" at <http://www.pharis-video.com/>

If unclaimed please return to
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DECUS Chapter Administrator
410 Concord Rd, Rhodes NSW 2138
Phone (02) 9022 5237,
e-mail william.thorne@hp.com,
web: www.decus.org.au